February 28th, 2022
Zoom Meeting
2:00 P.M. - 3:00 P.M.

Prof. Wenpin Tang
(Columbia University)

Some stories about Brownian interacting systems with absorption

Abstract: In this talk I will discuss several models of interacting particle systems with absorption. These models arise naturally in finance where a limited resource is available to control potential risks. In the first part of this talk, I will discuss the 'Up the River' problem where a unit drift is distributed among a finite collection of Brownian particles on the positive real line, which are annihilated once they reach the origin. The analysis relies on the hydrodynamic approach and rank-dependent SDEs. This is based on joint work with Li-Cheng Tsai. In the second part, I will talk about McKean-Vlasov equations involving hitting times. This is motivated from modeling systemic risk in the financial market, and relies on tools from partial differential equations. Some ongoing efforts with Erhan Bayraktar, Gaoyue Guo and Paul Zhang in this direction will also be discussed.

Zoom link:
Topic: Math Finance Colloquium (USC)
Time: Feb 28, 2022 02:00 PM Pacific Time (US and Canada)

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